Service Manual

ER1 mkII

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1st Edition
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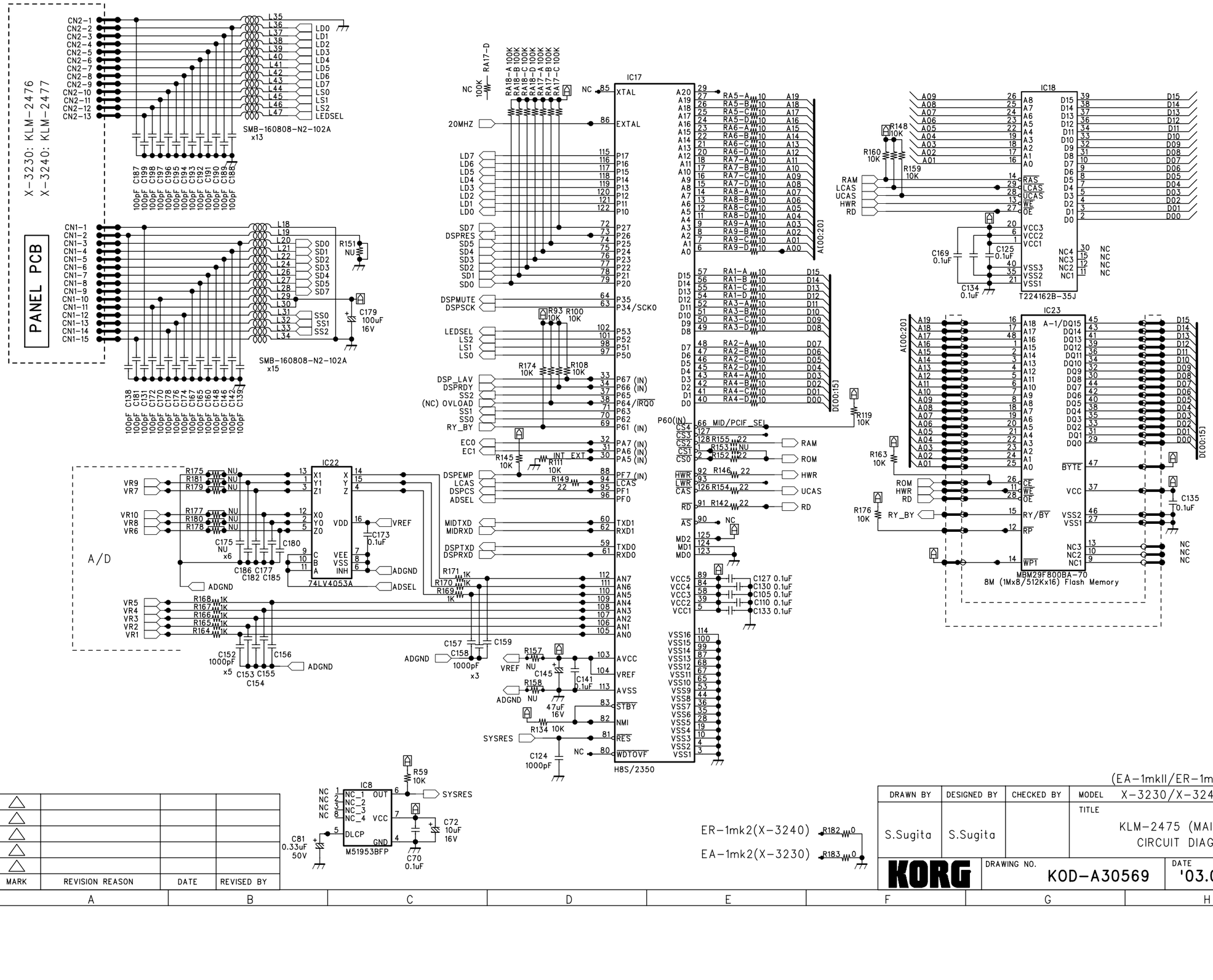

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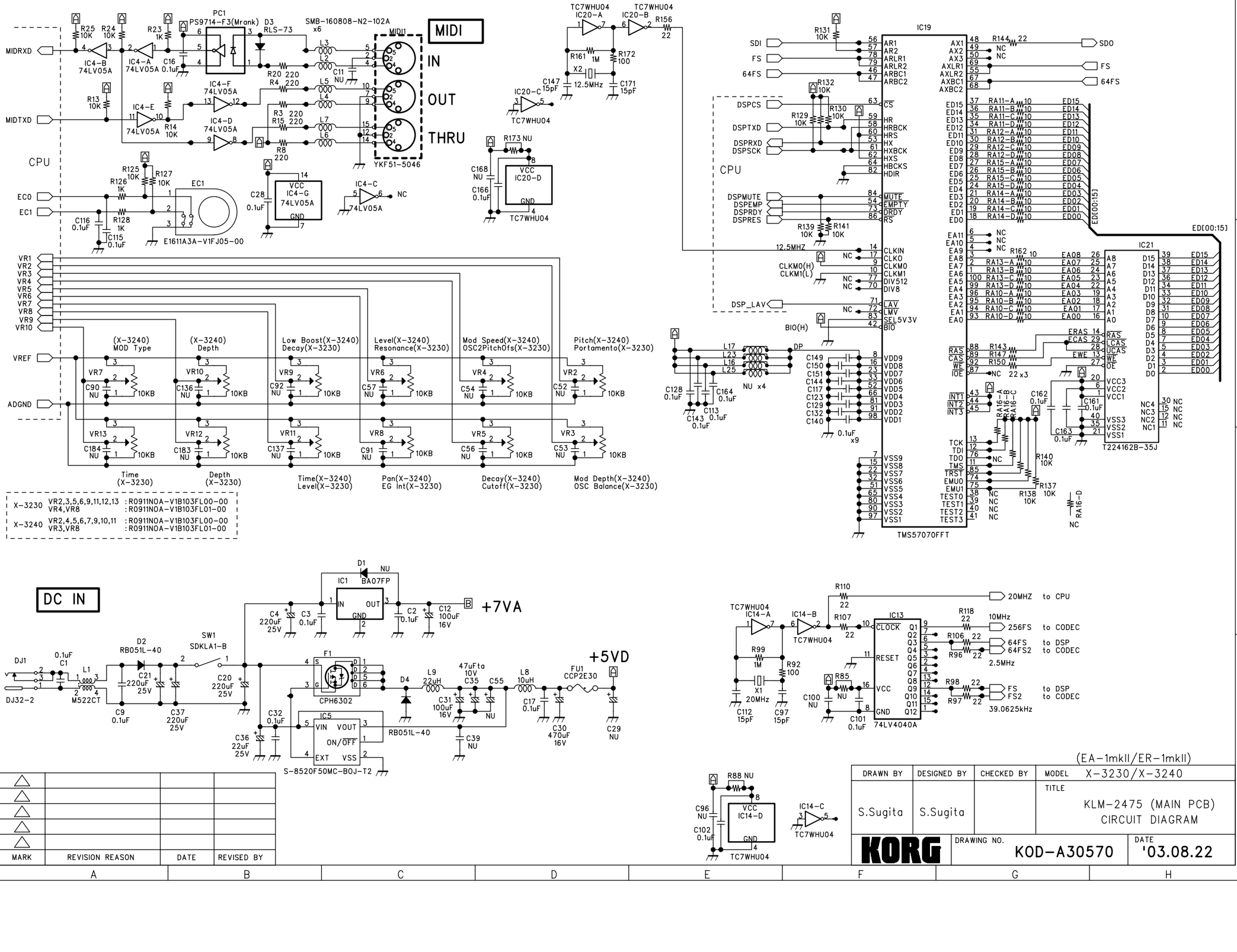
(EA-1mkII/ER-1mkII)

DRAWN BY	DESIGNED BY	CHECKED BY	MODEL X-3230/X-3240
S.Sugita	S.Sugita		TITLE KLM-2475 (MAIN PCB) CIRCUIT DIAGRAM
KORG	DRAWING NO. KOD-A30569		DATE '03.08.22


MIDI
IN
OUT
THRU
PC1
PS9714-F3(Mrank)
D3
RLS-73
SMB-160808-N2-102A
x6
MIDIJ
YKF51-5046
IC4-B 74LV05A
IC4-A 74LV05A
IC4-F 74LV05A
IC4-E 74LV05A
IC4-D 74LV05A
IC4-C 74LV05A
IC20-A TC7WHU04
IC20-B TC7WHU04
IC20-C TC7WHU04
IC20-D TC7WHU04
IC4-G 74LV05A
X2 12.5MHz
CPU
EC0
EC1
EC1
E1611A3A-V1FJ05-00
VR1
VR2
VR3
VR4
VR5
VR6
VR7
VR8
VR9
VR10
VREF
ADGND
(X-3240) MOD Type
(X-3240) Depth
Low Boost(X-3240) Decay(X-3230)
Level(X-3240) Resonance(X-3230)
Mod Speed(X-3240) OSC2PitchOfs(X-3230)
Pitch(X-3240) Portamento(X-3230)
Time (X-3230)
Depth (X-3230)
Time(X-3240) Level(X-3230)
Pan(X-3240) EG Int(X-3230)
Decay(X-3240) Cutoff(X-3230)
Mod Depth(X-3240) OSC Balance(X-3230)
X-3230 VR2,3,5,6,9,11,12,13 : R0911NOA-V1B103FL00-00
VR4,VR8 : R0911NOA-V1B103FL01-00
X-3240 VR2,4,5,6,7,9,10,11 : R0911NOA-V1B103FL00-00
VR3,VR8 : R0911NOA-V1B103FL01-00
IC19
TMS57070FFT
IC21
T224162B-35J
ED[00:15]
SDI
FS
64FS
SDO
FS
64FS
DSPCS
DSPTXD
DSPRXD
DSPSCK
DSPMUTE
DSPEMP
DSPRDY
DSPRES
12.5MHZ
CLKM0(H)
CLKM1(L)
DSP_LAV
BIO(H)
DP
NU x4
0.1uF x9
TCK
TDI
TDO
TMS
TRST
EMU0
EMU1
TEST0
TEST1
TEST2
TEST3
DC IN
D1 NU
IC1 BA07FP
+7VA
D2 RB051L-40
SW1 SDKLA1-B
DJ1
DJ32-2
M522CT
F1
CPH6302
D4 RB051L-40
IC5
S-8520F50MC-BOJ-T2
+5VD
FU1 CCP2E30
IC14-A TC7WHU04
IC14-B TC7WHU04
IC14-C TC7WHU04
IC14-D TC7WHU04
IC13 74LV4040A
X1 20MHz
2.5MHz
39.0625kHz
20MHZ to CPU
256FS to CODEC
64FS to DSP
64FS2 to CODEC
FS to DSP
FS2 to CODEC
(EA-1mkII/ER-1mkII)
DRAWN BY S.Sugita
DESIGNED BY S.Sugita
CHECKED BY
MODEL X-3230/X-3240
TITLE KLM-2475 (MAIN PCB) CIRCUIT DIAGRAM
DRAWING NO. KOD-A30570
DATE '03.08.22
MARK REVISION REASON DATE REVISED BY
KORG

AUDIO IN 1

AUDIO IN 2

X-3240 Only

INPUT

+5VA

EQ

High Low

OUTPUT

PHONES

X-3230: Mono
X-3240: Stereo

L/MONO

R

SYSRES
256FS
SDI
SDO
64FS2
FS2

OUT_L
OUT_R

CODEC_VD

X-3230 : 10K
X-3240 : NU

X-3230 : 0.047uF
X-3240 : 0.1uF

R0911GAF-V1B103FL00-00H1
10K x2

13.1KHz
X-3230:143.1Hz
X-3240: 98.1Hz

(EA-1mkII/ER-1mkII)

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DRAWN BY	DESIGNED BY	CHECKED BY	MODEL
S.Sugita	S.Sugita		X-3230/X-3240

TITLE: KLM-2475 (MAIN PCB) CIRCUIT DIAGRAM

KORG

DRAWING NO. KOD-A30571

DATE '03.08.22

Main BOARD
KLM-2475

DTC114EKA x8

LED17
LED_MTAD563SR_B

RED (SMT)
(SML-212VTT86)

GREEN (SMT)
(CL-200YG-C-TU)
(CL-201YG-C-TU) or

GREEN (LEAD)
(SLP-290B-51)

RED (LEAD)
(SLP-190B-51)

74LV138A

WD1-26:
MC2838 x26

PNL CHECK
(X-3240)

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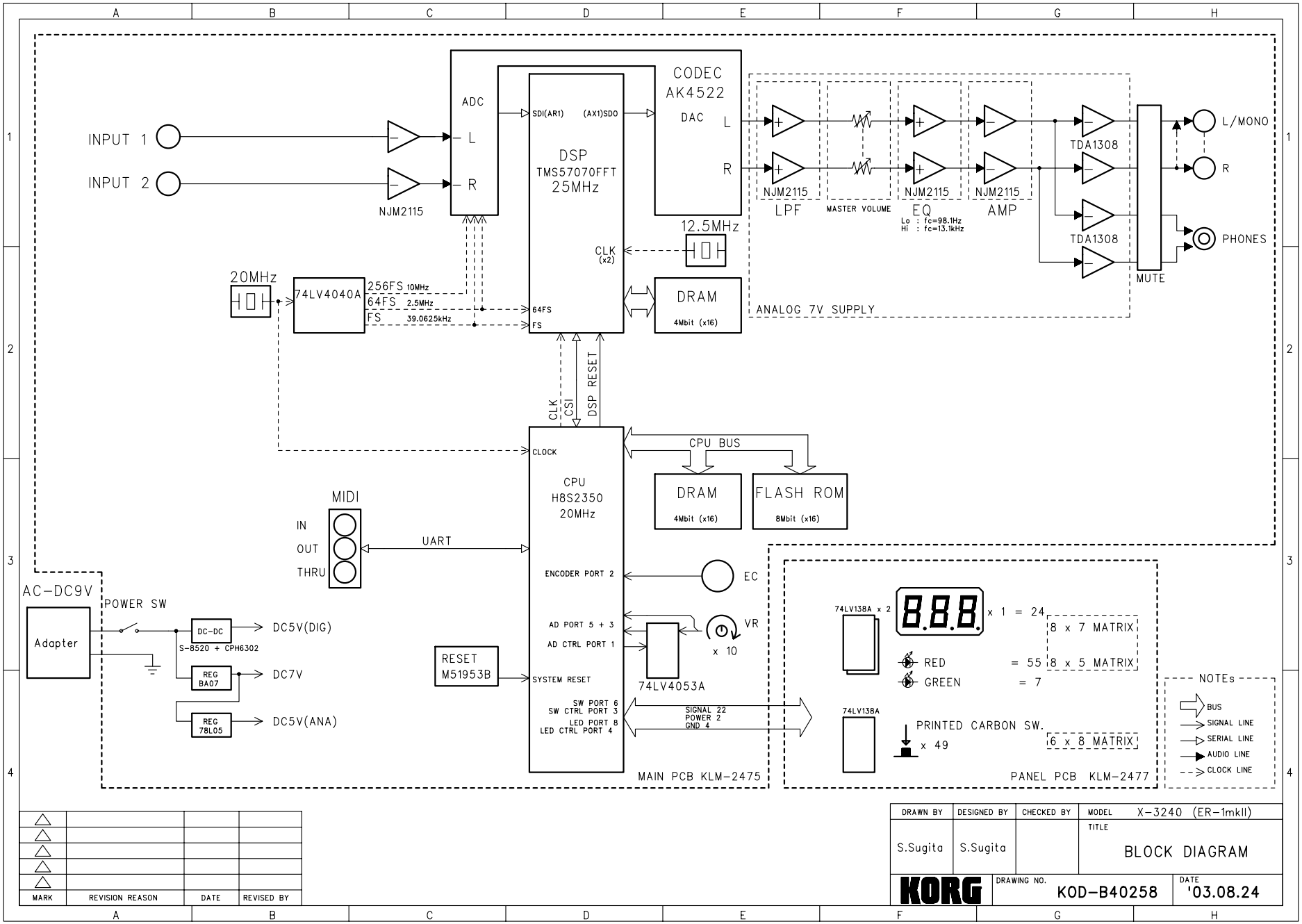
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL X-3240 (ER-1mkII)
S.Sugita	S.Sugita		TITLE KLM-2477 PANEL BOARD
KORG	DRAWING NO. KOD-A30573		DATE '03.08.22



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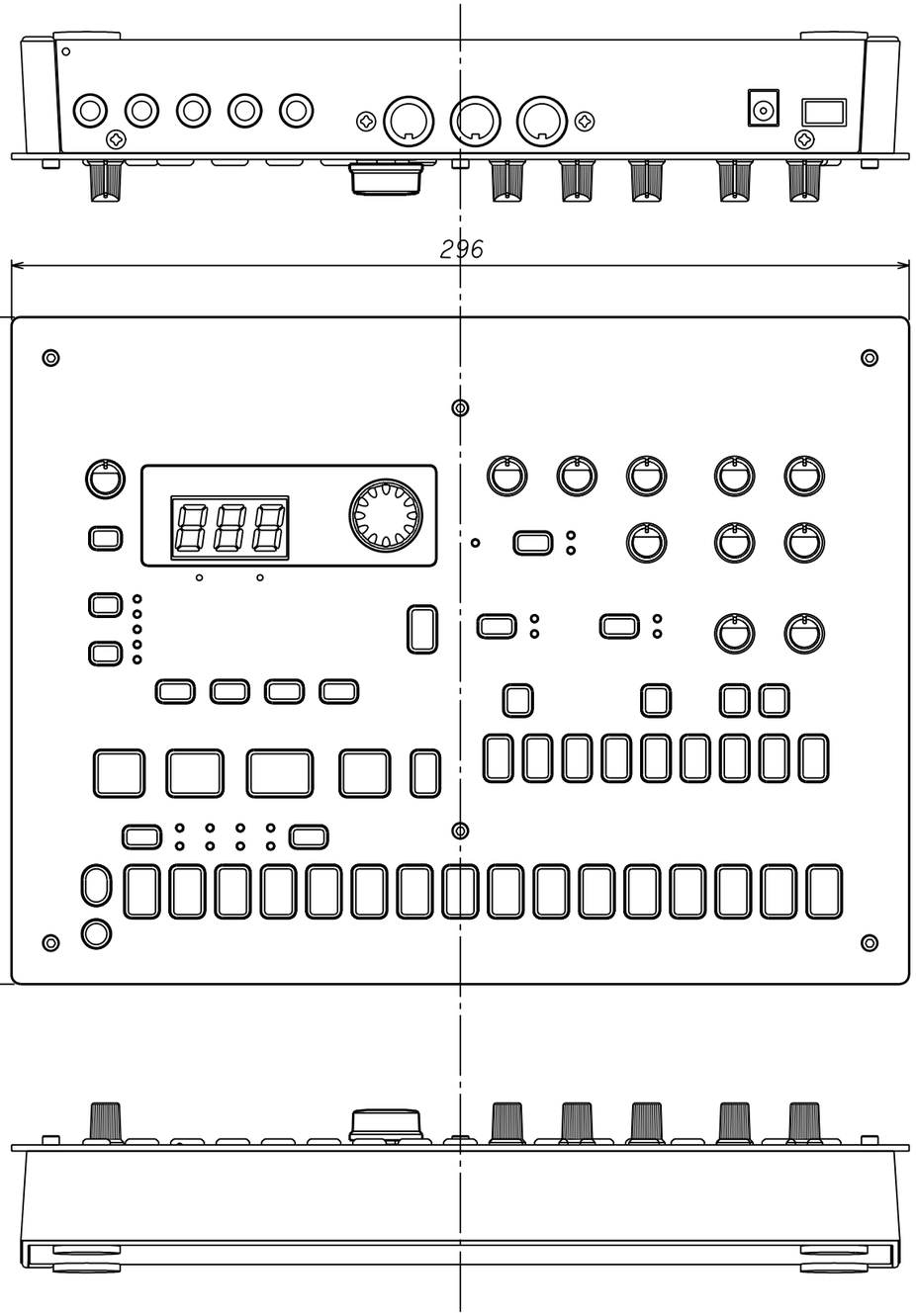
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL X-3240 (ER-1mkII)
S.Sugita	S.Sugita		TITLE BLOCK DIAGRAM
KORG	DRAWING NO. KOD-B40258		DATE '03.08.24

■製品外形寸法　　単位；mm	
設計値	カタログ／取説公表寸法
296(W)x220.4(D)x54.6(H)	296(W)x220(D)x55(H)
■製品重量	
実測値	カタログ／取説公表寸法
1.52kg	1.5kg



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COMMERCIAL TOLERANCE ±　　mm

1	X-3240					
MODEL		SPECIFICATION			PARTS NAME	PARTS No.
WEIGHT:		DRAWN	CHECKED	APPROVED	TITLE OUTLINE	試作図
		服部 03/05/20	島川 03/09/02	安達 03/09/02	外形図	金型手配図
						金型発注図
KORG	KORG INC.	SCALE 1/2		DRAWING No. KOC-A30178		量産図面
						総合製作書用図面 ○

A3

EA/ER-1mkII Test Mode

How to start and operate the test mode

[■] + [TAP] & [POWER ON]: Internal test & External test (normal test mode)
[●] + [■] & [POWER ON]: External test only

[16]: Step up (except the SW/LED tests)
[15]: Step down (except the SW/LED tests)
[▲]: Item up
[▼]: Item down

[SHIFT]+[16]: Error skip

PART CODE	PART NAME	NOTE	Q'TY
001247501	PCB ASSY KLM-2475 ER1MK2	M.PART	1
001247700	PCB ASSY KLM-2477 ER1MK2	M.PART	1
304000070	TR 2SA812-T1B (M5-7) (TS)	KLM-2475 ER1MK2	1
304020230	TR 2SC3661-TA/TB(3K) (TS)	KLM-2475 ER1MK2	4
304020380	DIGITAL TR FP1L2Q-T1B (TS)	KLM-2477	12
304050140	DIGITAL TR DTC114EKA T146(TS)	KLM-2477	8
304060250	FET CPH6302-TL(TS)	KLM-2475 ER1MK2	1
312051600	LED SLP-190B-51	KLM-2477	17
312052300	LED SLP-290B-51	KLM-2477	5
314001400	DIODE RLS-73 TE-11 (TS)	KLM-2475 ER1MK2	1
314029800	LED CL-200YG-C-TU (TS)	KLM-2477	2
314030700	DIODE RB051L-40TE25(TS)	KLM-2475 ER1MK2	2
315000600	DOUBLE DIODE MC2838-T12-1 (TS)	KLM-2477	26
320004649	IC HD6412350	KLM-2475 ER1MK2	1
320012328	IC MBM29F800BA-70PFTN(X-3240)	KLM-2475 ER1MK2	1
320021156	IC TMS57070FFT	KLM-2475 ER1MK2	1
324007006	IC BA07FP-E2 (TS)	KLM-2475 ER1MK2	1
324009004	IC NJM78L05UA-TE2 (TS)	KLM-2475 ER1MK2	1
324009019	IC NJM2115M-TE2 (TS)	KLM-2475 ER1MK2	6
324011012	IC M51953BFP-600C (TS)	KLM-2475 ER1MK2	1
324018006	IC AK4522-VF-E2(TS)	KLM-2475 ER1MK2	2
324021014	IC SN74LV138ANS-EL (TS)	KLM-2477	3
324021113	IC SN74LV4040APWR (TS)	KLM-2475 ER1MK2	1
324021114	IC SN74LV05APWR (TS)	KLM-2475 ER1MK2	1
324021127	IC SN74LV4053APWR (TS)	KLM-2475 ER1MK2	1
324023007	IC S-8520F50MC-B0J-T2(TS)	KLM-2475 ER1MK2	1
324038005	IC TDA1308T	KLM-2475 ER1MK2	2
324046001	IC T224162B-35J-TR(TS)	KLM-2475 ER1MK2	2
334001700	PHOTO COUPLER PS9714-F3 M-RANK	KLM-2475 ER1MK2	1
335012100	X'TAL HC-49US 20.00MHZ	KLM-2475 ER1MK2	1
375014800	PSW SDKLA10200	KLM-2475 ER1MK2	1
405012000	AC ADAPTOR KA-181 (100V)	M.PART 100JP	1
405012100	AC ADAPTOR KA-183 (120V)	M.PART 117US	1
405012100	AC ADAPTOR KA-183 (120V)	M.PART 117EX	1
405012100	AC ADAPTOR KA-183 (120V)	M.PART 117CN	1
405012200	AC ADAPTOR KA-189 (230V)	M.PART 230GE	1
405012200	AC ADAPTOR KA-189 (230V)	M.PART 230WG	1
405012200	AC ADAPTOR KA-189 (230V)	M.PART 230FR	1
405012300	AC ADAPTOR KA-186 (230V UK)	M.PART 230UK	1
454012700	DC POWER JACK DJ32-2	KLM-2475 ER1MK2	1
480010200	3DIN SOCKET YKF51-5046	KLM-2475 ER1MK2	1
620018200	PSW KNOB KOC-E40224	M.PART	1
620035700	X-829P RUBBER KEY-P E30239	M.PART	1
644007700	GND SPRING KOC-C46014	M.PART	2
644009000	X8510 GND SPRING (K) KOC-C4116	M.PART	3
*312X323000	CHIP LED SML-212VTT86 RED	KLM-2477	38
*314X323001	DIODE MC2840	KLM-2475 ER1MK2	1
*315X323000	3DIGIT NUMERIC LED MT-AD563SR	KLM-2477	1
*324X040005	IC TC7WHU04FK	KLM-2475 ER1MK2	2
*335X040001	X'TAL HC-49US 12.5MHZ	KLM-2475 ER1MK2	1
*362X323000	VR R0911NOA-VB103FL00 10KB	KLM-2475 ER1MK2	8

PART CODE	PART NAME	NOTE	Q'TY
*362X323001	VR R0911NOA-V1B103FL01 10KBCC	KLM-2475 ER1MK2	2
*362X323002	VR R0911GAF-V1B103FL00 10KBX2	KLM-2475 ER1MK2	1
*370X323000	REC E1611A3A-V1FJ05-01Y4	KLM-2475 ER1MK2	1
*450X323000	PHONE JACK PJ-603AG	KLM-2475 ER1MK2	5
*472X323000	PIN HEADER SIDE JS-1125R-13	KLM-2475 ER1MK2	1
*472X323001	PIN HEADER SIDE JS-1125R-15	KLM-2475 ER1MK2	1
*475X323000	HARNESS HNS-3285 BOARD IN	KLM-2477	1
*475X323001	HARNESS HNS-3286 BOARD IN	KLM-2477	1
*500X851003	X-8510 RUBBER LEG KOC-F40709	M.PART	4
*575X323000	LED SPACER LEDH-3.5	KLM-2477	22
*620X323001	X3230/3240 RUBBER KEY-L E30327	M.PART	1
*620X324000	X-3240 RUBBER KEY-F E30237-4	M.PART	1
*630X324000	X-3240 WINDOW KOC-F41059-2	M.PART	1
*641X323002	X-3230 CAP SCREW KOC-C41316	M.PART	6
*641X324000	X-3240 PANEL KOC-C20407	M.PART	1
*641X324001	X-3240 BOTTOM COVER C20408-2	M.PART	1
*646X324000	X-3240 MID CASE KOC-E10214-2	M.PART	1